

## IN THE CLAIMS

1. (Canceled)

2. (Currently Amended) The apparatus system of claim 43, 4, wherein the listed first network devices include one or more of the following: ~~comprises one of~~ a computer, personal digital assistant, pager, cellular telephone, handheld messaging device, facsimile machine, copier, printer, telephone, security camera, household appliance, vending machine, kiosk, or digital camera.

3. (Currently Amended) The apparatus system of claim 43, 4, wherein the listed first network devices comprise one or more of the following: ~~comprises one of~~ an inkjet printer, laser printer, wide format printer, or dot matrix printer.

4. (Currently Amended) The apparatus system of claim 43, 4, wherein the listed first network devices comprise ~~comprises~~ an Internet protocol telephone.

5. (Currently Amended) The apparatus system of claim 43, 4, wherein the listed first network devices comprise ~~comprises~~ a network connection for coupling to the first network.

6. (Currently Amended) The apparatus system of claim 43, 4, wherein one or more of the first ~~the first network~~ comprise a local area network.

7. (Currently Amended) The apparatus system of claim 43, 4, wherein one or more of the first network ~~the first network~~ comprises a plurality of interconnected networks.

8. (Currently Amended) The apparatus system of claim 43, 4, wherein the second network comprises any of a wide area network, global network, public network, or the Internet.

9. (Currently Amended) The apparatus system of claim 43, 4, wherein one or more of the first networks ~~the first network~~ comprises a firewall, and the requesting first network device is located within the firewall.

10. (Currently Amended) The apparatus system of claim 43, 4, wherein one or more of the first networks ~~the first network~~ comprises a firewall, and the directory server apparatus is located outside the firewall.

11-42. (Canceled).

43. (Currently Amended) A directory server apparatus for use in a system that includes multiple first networks interconnected via a second network, where each of the first networks are linked to one or more network devices each having assigned thereto an internal a-source address on the respective first network and device identity information, where a router couples at least one of the first networks to the second network, and the router uses multiple source addresses on the second network for routing messages from network devices on the first network via the second network, where the directory server apparatus is linked directly or indirectly to the second network and comprises:

- a directory table containing a listing of the network devices and prescribed data associated with each listed network device, the prescribed data including the source address and device identity information assigned to the listed network device;

- where the directory table further includes a cross-map listing all equivalent source addresses of some or all of the source address in the directory table, where source addresses are equivalent when they represent network devices of the same first network;

- where the directory table further includes a listing of access rights associated with some or all of the network devices;

- a message processor programmed to perform operations including:

- responsive to receiving network devices' assigned source addresses and device identity information, registering said received addresses and

information in the directory table;  
responsive to receiving a query message via the second network from a  
requesting network device coupled to one of the first networks,  
performing operations including:  
parsing the query message to extract a source address of the  
requesting network device and a query seeking network  
devices satisfying stated criteria;  
referencing the directory table to retrieve any access rights listed in  
the directory table in association with the requesting network  
device;  
consulting the cross-map to identify any equivalent source  
addresses listed for the source address of the requesting  
network device;  
referencing the directory table to identify any listed network devices  
that (1) satisfy the retrieved access rights, and (2) satisfy the  
stated criteria, and (3) have an associated network address  
matching the source address or any equivalent source  
address of the requesting network device; and  
sending the requesting network device an identification of any  
network devices satisfying the criteria in reply to said query  
message.

~~responsive to receiving a query message via the second network from a~~  
~~requesting network device coupled to one of the first networks,~~  
~~parsing the query message to extract a source address of the~~  
~~requesting network device and a query seeking network devices~~  
~~satisfying stated criteria, accessing the directory table to identify~~  
~~any listed devices satisfying the criteria, and sending the requesting~~  
~~network device an identification of any network devices satisfying~~  
~~the criteria in reply to said query message.~~

44. (Canceled)

45. (Canceled)

46. (Previously Presented) The apparatus of claim 43, where the device identity information listed in the directory table includes device type.

47. (Previously Presented) The apparatus of claim 43, where the device identity information listed in the directory table includes device name.

48. (Previously Presented) The apparatus of claim 43, where the device identity information listed in the directory table includes each of the following for a given network device: device type, device name, location within a building, geographic location, telephone number of the network device, prescribed access rights to the network device, performance characteristics of the network device, classes of users or network devices to which the network device is available or unavailable.

49. (Previously Presented) The apparatus of claim 43, where the source address includes an internal address of a network device on one of the first networks.

50. (Previously Presented) The apparatus of claim 43, where a router couples a given one of the first networks to the second network, and the router uses multiple addresses on the second network for routing messages from network devices on the given network via the second network, and where the source addresses of network devices on the given network constitute the addresses on the second network.

51. (Previously Presented) The apparatus of claim 43, further comprising one or more of the network devices.

52. (Currently Amended) A computer program product storing a computer executable program for operating a directory server apparatus in a system that includes multiple first networks interconnected via a second network, where each of the first networks are

linked to one or more network devices each having assigned thereto an internal a source address on the respective first network and device identity information, where a router couples at least one of the first networks to the second network, and the router uses multiple source addresses on the second network for routing messages from network devices on the first network via the second network, where the directory server apparatus is linked directly or indirectly to the second network, the computer executable program comprising operations of:

- providing a directory table containing a listing of the network devices and prescribed data associated with each listed network device, the prescribed data including the source address and device identity information assigned to the listed network device;

- where the directory table further includes a cross-map listing all equivalent source addresses of some or all of the source address in the directory table, where source addresses are equivalent when they represent network devices of the same first network;

- where the directory table further includes a listing of access rights associated with some or all of the network devices;

- causing a message processor to perform operations including:

- responsive to receiving network devices' assigned source addresses and device identity information, registering said received addresses and information in the directory table;

- responsive to receiving a query message via the second network from a requesting network device coupled to one of the first networks,
  - performing operations including:

- parsing the query message to extract a source address of the requesting network device and a query seeking network devices satisfying stated criteria;

- referencing the directory table to retrieve any access rights listed in the directory table in association with the requesting network device;

- consulting the cross-map to identify any equivalent source addresses listed for the source address of the requesting network device;

referencing the directory table to identify any listed network devices that  
(1) satisfy the retrieved access rights, and (2) satisfy the stated  
criteria, and (3) have an associated network address matching the  
source address or any equivalent source address of the requesting  
network device; and

sending the requesting network device an identification of any network  
devices satisfying the criteria in reply to said query message.

~~responsive to receiving a query message via the second network from a~~  
~~requesting network device coupled to one of the first networks,~~  
~~parsing the query message to extract a source address of the~~  
~~requesting network device and a query seeking network devices~~  
~~satisfying stated criteria, accessing the directory table to identify~~  
~~any listed devices satisfying the criteria, and sending the requesting~~  
~~network device an identification of any network devices satisfying~~  
~~the criteria in reply to said query message.~~